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ABSTRACT

The Chinese Bilingual Education Program operates at Seward Park and Washington Irving high schools in New York City. The program offers instructional and supportive services to native Chinese speakers of limited English proficiency. This report describes the program's history, philosophy, organization and staffing, funding, and goals and objectives; outlines activities undertaken in both its instructional and noninstructional components; and presents evaluation findings for 1981-82, the program's second year. It is concluded that most participating students at both schools surpassed program objectives in English, equalled or surpassed objectives in mathematics, science, social studies, and in business and vocational education, and performed well in their native language courses. In addition, the average attendance rate of program students exceeded the school average by 20 percent. In noninstructional areas, a biology text was developed for classroom use, and a translation of general science curriculum materials was begun. Academic and personal counseling was available to students, and family workers made home visits to parents when necessary. In turn, parents were generally responsive, attending program meetings and participating in the voluntary advisory committee. Development activities for staff included workshops, staff meetings, conferences, and university courses. (GC)

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O.E.E. Evaluation Report

April, 1983

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SEWARD PARK HIGH SCHOOL

WASHINGTON IRVING HIGH SCHOOL

CHINESE BILINGUAL EDUCATION PROGRAM

1981-1982

Principals:
Dr. Noel N. Kriftcher
Seward Park High School

Dr. Gerard N. Oak
Washington Irving High School

Director:
Ms. Katherine Sid

ED 023 065

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CHINESE BILINGUAL EDUCATION PROGRAM

Locations:	Seward Park High School 350 Grand Street New York, New York Washington Irving High School 40 Irving Place New York, New York
Year of Operation:	1981-1982, second of a three-year cycle
Target Language:	Chinese
Number of Participants:	500 students in grades 9 to 12: 425 at Seward Park, 75 at Washington Irving.
Program Director:	Ms. Katherine Sid

I. CONTEXT

COMMUNITY SETTING

The Chinese Bilingual Education Program operates at two sites in Manhattan, Seward Park High School and Washington Irving High School. These sites were selected for the program because of their nearness to Chinatown, their high ratio of students of Chinese origin with limited English Proficiency (LEP), and their easy accessibility by bus or subway from other areas where recent Chinese immigrants and refugees live.

Seward Park is on the Lower East Side, a ten-minute walk from Chinatown. The area is mostly low-income, with tenement housing, stores, and small businesses. Residents are Italian, Jewish, and Hispanic as well as Asian. The ethnic composition has been changing as many Italian and Jewish families move out and Asian families move in.

Washington Irving is just north of 14th Street on the East Side. The area is residential and more affluent than the Lower East Side. It is ethnically mixed, with Ukrainians, Hispanics, blacks, and many others.

SCHOOL SETTING

Most public high school students who live in Manhattan south of 14th Street attend Seward Park High School. The total enrollment in October 1981* was about four thousand. Forty-seven percent were Hispanic, 32 percent were Asian, 15 percent were black, and 6 percent belonged to other ethnic groups.

Washington Irving is one of two all-girl public high schools in Manhattan. Thus it draws its students not only from its immediate vicinity, but also from all the boroughs. The total enrollment in October, 1981* was about 2,600. Fifty-nine percent of the students were black, 30 percent were Hispanic, 8 percent were Asian, and 3 percent represented other ethnic groups.

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*Pupil Ethnic Composition Report, October 1981, Office of Student Information Services, Board of Education of the City of New York.

II. STUDENT CHARACTERISTICS

The Chinese Bilingual Education Program offers instructional and supportive services to LEP students at Seward Park and Washington Irving whose native language is Chinese. Students are eligible to participate if they score below the twenty-first percentile on the New York City Language Assessment Battery (LAB) or show an inability to cope with content-area studies (science, mathematics, social studies) in classes taught exclusively in English. The selection process typically includes:

1. an interview by a guidance counselor and admission officer;
2. testing and evaluation for English placement by the chairperson for English or for English as a second language (the evaluation includes department-developed oral and written tests, as well as the LAB);
3. evaluation of Chinese students who are not prepared for mainstream classes by the Chinese bilingual program (the program director and/or bilingual guidance counselor make recommendations based on an interview conducted in the student's native dialect, on test results, and on assessment of previous education records);
4. testing for level of proficiency in Chinese by a Chinese language teacher;
5. placement interviews and tests administered by the chairpersons of the content-area departments.

Final placement is coordinated by the bilingual program and is implemented by the program offices of the schools.

Of the 1,310 Asian students enrolled at Seward Park, 1,142 were LEP. Only 425 of them were served by the program in 1981-1982, however, because of budget limitations. (Those students not in the program attended classes in English as a second language and in Chinese.) The target population at Washington Irving was 75, in grades nine to eleven.

Program students were diverse in educational background, national origin, socioeconomic status, and general experience. They all used Chinese at home, the majority speaking the Cantonese dialect and others speaking Toisanese, Swatonese, or Mandarin.

Tables 1 and 2 present the number, nationality, and native language of program students at Seward Park and Washington Irving, respectively.

TABLE 1

Number and Percentages of Program Students at Seward Park High School by Language and Country of Birth

Language	Country of Birth	Number	Percent
Korean	Korea	2	0.4
Vietnamese	Vietnam	52	11.3
Chinese	People's Republic of China	292	63.6
	Taiwan	2	0.4
	Hong Kong	94	20.5
	Cambodia	4	0.9
	Other Asian countries	13	2.8
	TOTAL	459	100.0

- The majority (64 percent) of students were born in the People's Republic of China. Of these, 51 percent speak Cantonese, 42 percent speak Mandarin, and 7 percent speak other Chinese dialects.

- Twenty percent of the students were born in Hong Kong. Of these, 97 percent speak Cantonese, 2 percent speak Mandarin, and 1 percent speak other Chinese dialects.

- Eleven percent of the students were born in Vietnam. Of these, 33 percent speak varieties of Chinese as native language, 33 percent speak Cantonese, particularly, and 8 percent speak Mandarin. Twenty-seven percent of the students speak Vietnamese as a native language.

- The remaining students were from Korea, Cambodia, Taiwan, and other Asian countries and most speak varieties of Chinese, except those born in Korea.

- None of these students were born in the United States.

TABLE 2

Number and Percentages of Program Students at Washington Irving High School by Country of Birth

Language: Cantonese and Mandarin Chinese

Country of Birth	Number	Percent
Vietnam	18	24.0
Cambodia	3	4.0
People's Republic of China	40	53.3
Taiwan	5	6.7
Hong Kong	7	9.3
Other Asian countries	2	2.7
TOTAL	75	100.0

.The majority (53 percent) of the students were from the People's Republic of China. Of these 67.5 percent speak Cantonese and 32.5 percent speak Mandarin.

.Twenty-four percent of the students were born in Vietnam. Of these, 72.2 percent speak Cantonese, 22.2 percent speak Mandarin, and 5.6 percent speak Vietnamese.

.Nine percent of the students were born in Hong Kong. All speak Cantonese.

.The remaining students were from Taiwan, Cambodia and other Asian countries. The Taiwan-born spoke Mandarin and the others Cantonese.

.None of the students were born in the United States.

Tables 3 and 4 show the sex and grade distribution of program students at Seward Park and Washington Irving, respectively. (As stated previously, Washington Irving is all-female.)

TABLE 3

Number and Percentages of Program Students at

Seward Park High School by Sex and Grade

Grade	Male N	Percent of Grade	Female N	Percent of Grade	Total N	Column Total: Percent of All Students
9	78	59	54	41	132	28
10	112	55	90	45	202	43
11	44	51	43	49	87	18
12	24	48	26	52	50	11
TOTAL	258	55	213	45	471	100

.The students were fairly evenly distributed by sex: male (55 percent) and female (45 percent).

.Male students outnumbered female students considerably in grades 9 and 10.

.Although enrollment increased from grade 9 to grade 10, it declined in grades 11 and 12.

.Most of the program students were in grade 10.

TABLE 4

Number and Percentages of Female Students at

Washington Irving High School by Grade

Grade	Number	Percent
9	20	27
10	48	64
11	7	9
TOTAL	75	100

.Although enrollment doubled from grade 9 to grade 10, it dropped drastically at grade 11.

.Most of the program students were in grade 10.

Because all of the program students were immigrants, their educational histories varied considerably. Many had suffered interrupted schooling, or, because of a lack of educational opportunities in their countries of origin, had received fewer years of education than their grade and level would indicate. The age and grade of program students is reported in Tables 5 and 6 for Seward Park and Washington Irving, respectively.

TABLE 5

Number of Program Students at Seward Park

High School by Age and Grade

Age	Grade 9	Grade 10	Grade 11	Grade 12	Total
14	2	4			6
15	19	16	1		36
16	24	33	7	1	65
17	30	50	19	8	107
18	31	40	27	10	108
19	16	34	13	14	77
20	5	17	13	9	44
21		5	5	3	13
22		1	1	5	7
Total	127	200	86	50	463
Overage Students:					
Number	106	147	59	31	343
Percent	83.4	73.5	68.6	62.0	74.0

Note. Shaded boxes indicate age range for the grade.

- Seventy-four percent of the program students were overage for their grade. The highest proportion of overage students was in grade 9.

- Most program students were 17 and 18 years of age. Most of these were in grade 10.

TABLE 6

Number of Program Students at Washington Irving High School by Age and Grade

Age	Grade 9	Grade 10	Grade 11	Total
15	3	4		7
16	3	13	2	18
17	6	11	3	20
18	3	8	1	12
19	4	10	1	15
20		2		2
Total	19	48	7	74
Overage Students:				
Number	16	31	2	49
Percent	84.2	64.5	28.5	66.2

Note. Shaded areas indicate age range for the grade.

.Sixty-six percent of the program students were overage for their grade. The highest proportion of overage students was in grade 9.

.Most program students were 17 years of age. Most of these were in grade 10.

That so many students in both schools were overage has implications for interpreting student outcomes and setting standards for expected rates of growth. Some of these were students who may have missed a year or more of school, whose placement may have reflected their age more than their educational preparation. As a result, they may lag in cognitive development in their native language, a factor that must be addressed, as it has implications for their ability to acquire oral and literacy skills in English.

In general, program staff felt that the students from Vietnam and mainland China had more difficulty adjusting to their new surroundings and culture than did the students from Hong Kong and Taiwan. The Vietnamese and mainland Chinese, having had far less contact with English, faced an uphill task in mastering the new language. The students also differed widely in their proficiency in content areas. Some students from mainland China experienced great difficulty in the academic and attitudinal areas. American history, economics, world history, and biology were reported to be the most frustrating and confusing to them.

III. PROGRAM DESCRIPTION

HISTORY

The Chinese Bilingual Education Program was funded for three years under Title VII. 1981-1982 was the second year of the funding cycle. Before the program began, Washington Irving had no Chinese bilingual program. Seward Park, however, had had five years of experience in this area, having started, in 1975, the Chinese Bilingual-Bicultural Program, the first such Federally-funded Chinese high school program in the country. Most of the present staff members worked in the previous program, thereby providing experience, continuity, and stability.

PHILOSOPHY

An evaluator, accompanied by a Cantonese-speaking scientist, spoke with the principals and assistant principals of the two schools and with the program's director, guidance counselors, teachers, and paraprofessionals. There was a consensus that bilingual education was crucial for the target population. Most of these students had little or no familiarity with American culture or the English language; some did not even know the alphabet. Without bilingual instruction and support services, they would be completely at a loss in the classroom, lagging irretrievably behind in their studies and losing years in their education. Program staff noted that most entering students lacked confidence and were unfamiliar with the American approach to discipline; some had a low tolerance for frustration. Therefore, more individualized attention was given within the program.

In general, the program aimed to equip students to join the appropriate mainstream classes with confidence. Both program staff and school ad-

ministrators viewed the program as transitional and supported the use of English in every classroom. All instruction in the program was offered in English. Some classes had paraprofessionals who interpreted and translated key concepts and terms.

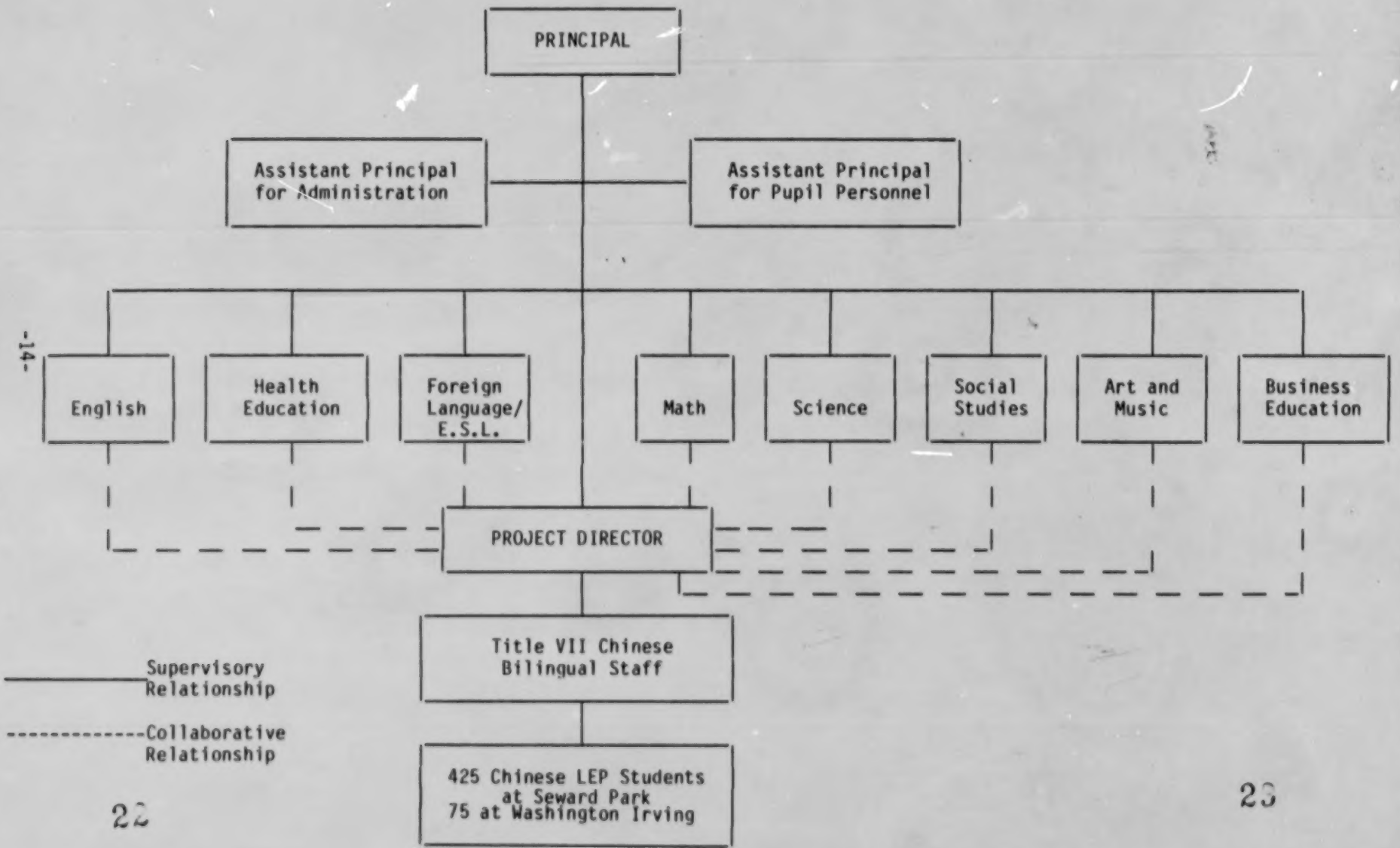
In addition to English-language development and academic studies, the program aimed to equip students with vocational skills. At Seward Park there were courses in accounting and typing; at Washington Irving offerings included clothing, home economics, typing, and business machine practice.

ORGANIZATION AND PERSONNEL

The program staff members were based at Seward Park High School and one staff member (a paraprofessional) worked full time at Washington Irving High School. The director, guidance counselor, and resource teachers visited Washington Irving High School whenever the need arose. Title VII personnel (the assistant to the director, two curriculum development specialists, an E.S.L. specialist, a guidance counselor, two family workers, and three paraprofessionals) were supervised by the project director, who also supervised five paraprofessionals paid by tax-levy funds. Content-area teachers were supervised by the assistant principal for the subject they taught. There was close coordination between the program and the content-area departments. There was also an effective working relationship among departments, and between the program and tax-levy teachers who worked with program students. In general, the program was well-organized. Figure 1 presents the administrative organization of the program.

FIGURE 1

Administrative Organization of the Chinese Bilingual Program



STAFF CHARACTERISTICS

Most of the staff had worked for the Chinese Bilingual-Bicultural Program, and thus had previous experience in bilingual education. The staff represented a broad range of interest and abilities. They commanded the following languages and dialects: Cantonese, Mandarin, Toisanese, Shanghainese, Fukienese, and Tagalog. The curriculum specialist had expertise in mathematics and computer science. The paraprofessionals specialized in mathematics, social studies, and science and were exceptionally well-qualified. One of the science paraprofessionals, for example, had taught science at the secondary level in Hong Kong for 28 years. Appendix A gives the staff characteristics.

FUNDING

The program received funds from E.S.E.A Title I and Title VII, from the tax levy (New York City Board of Education funds), and P.S.E.N. Table 7 shows the funding of the instructional component of the program, and Table 8 lists the program staff who provided non-instructional services.

TABLE 7

Funding of Instructional Component

	Source(s)	Number of Personnel Teachers	Paraprofessionals
E.S.L.	Title I	4	3
	P.S.E.N.	5	3
R.C.A. (English Reading)	Tax Levy	4	0
Native Language	Tax Levy	3	0
Mathematics	Tax Levy	2	
Social Studies	Tax Levy	4.2	
Science	Tax Levy	4.2	
Other (Voc. Ed. etc.)	Tax Levy	2	
Instructional Supportive Service	Title VII		3
	Tax Levy		5

TABLE 8

Funding of Non-Instructional Component

Function	Staff Members	Funding Sources
Administration & Supervision	1 Program Director	Title VII
	1 Assistant to the Director	Title VII
Curriculum Development	1 E.S.L. Specialist	Title VII
	2 Curriculum Specialists	Title VII
Supportive Services	1 Guidance Counselor	Title VII
	2 Family Workers	Title VII
	2 Grade Advisors (part time)	Tax Levy
Staff Development	1 Teacher Trainer	Title VII
	Consultants	Title VII
Parental and Community Involvement	1 Paraprofessional (Parent/Community Specialist vacant)	Title VII

GOALS AND OBJECTIVES

The Chinese Bilingual Education Program had the following evaluation objectives:

1. At the conclusion of each year of the project period, LEP students will demonstrate increased mastery of English as measured by the Criterion Referenced English Syntax Test (CREST). It is anticipated that program students will master one instructional objective per month.

2. Seventy-five percent of the students in the program will demonstrate gains in their knowledge of Chinese by advancing one level in Chinese language arts for each semester of instruction, as measured by project-developed instruments. All entering students are placed in the appropriate level according to their achievements in the entry level examination. They will be post-tested on the appropriate levels by teacher-designed instruments assessing reading comprehension and character acquisition.

3. Eighty percent of the students in the program will pass teacher-made examinations in career subjects (home economics, bookkeeping, secretarial studies, computer programming, etc.).

4. Eighty percent of the students in the program will pass the uniform teacher-made final examinations in substantive subjects (mathematics, science, and social studies).

5. The number of trained Chinese bilingual staff available for the development of needed educational programs will be increased. For each sponsored course taken in a college or university, the participant will be required to show proof of a passing grade. For each sponsored workshop,

seminar, or conference attended, the participant will be required to submit either a written or an oral report to the project director on materials acquired and the content.

6. More parents of program students will attend activities and functions designed to inform them of their children's status and progress and to increase their awareness of their children's problems, the facilities available to them in the school and the community, and the potential options open to graduating students in employment and higher education. Comparative attendance statistics will be compiled.

IV. INSTRUCTIONAL COMPONENT

OVERVIEW

The program provided LEP Chinese students with intensive instruction in E.S.L. and the native language, classes in content areas and vocational training, and reinforcement of cultural identity. Many bilingual classes were offered. Where bilingual instruction was not available, program staff, including paraprofessionals, translated and interpreted to help students make progress in academic areas and adjust to the educational system. Program students also received instruction in some subjects with the mainstream population of the school. Through these classes, and through participation in lunchroom and assembly programs, the participants were integrated into the school population as a whole.

Because program students spoke a variety of mutually unintelligible dialects, it was impossible to serve each one by teaching in his or her dialect. Both Cantonese and Mandarin were used, depending on the fluency of the bilingual teacher or paraprofessional. The bilingual mathematics teacher spoke Mandarin and Cantonese. Of the five paraprofessionals, two spoke only Cantonese and three spoke both Mandarin and Cantonese. Mandarin was used exclusively in Chinese-language classes. Although this language usage was not ideal, it was the only feasible arrangement because of budget limitations and class size.

PLACEMENT, PROGRAMMING, AND MAINSTREAMING

Once students were identified as eligible for program participation and selected for entry, they were programmed individually. Oral interviews

were conducted in the students' native dialects when possible; the director and bilingual guidance counselor then assessed results and previous educational records (if available). The chairpersons of the social studies, mathematics, science, and foreign-language departments and a Chinese teacher also conducted placement interviews and testing, and contributed their findings to the programming process. Finally, the Chinese bilingual program coordinated the placement and programming for each student; its recommendations were implemented by the program offices of the schools.

In general, transition to the mainstream was emphasized in the instructional program. Teachers and students alike viewed the program as a means of giving students the skills and the confidence to enter mainstream classes. Content-area classes were taught in English or bilingually. The transition process was gradual and partial. As students entered the mainstream, they continued to take some classes and receive guidance counseling from the program.

The students interviewed by the evaluator all considered the program necessary and helpful. However, some thought that the availability of interpretation in certain classes made students too dependent on the paraprofessional.

INSTRUCTIONAL OFFERINGS AT SEWARD PARK

Each student's program at Seward Park included intensive instruction in English as a second language and/or transitional English; the content areas of mathematics, science, social studies, and business education; and mainstream courses, including physical education, art, and electives.

English as a second language was offered at four levels. Levels 1 and 2 consisted of two 40-minute classes each day. Levels 3 and 4 consisted of

one class period each day. In addition, there were four courses in reading and two courses in writing. Table 9 lists the fall and spring offerings in English at Seward Park.

TABLE 9

Instruction in English at Seward Park High School

Course Title and Levels	Number of Classes		Average Class Register		Class Periods Per Week
	Fall	Spring	Fall	Spring	
E.S.L. 1	3	4	30	20	10
E.S.L. 2	5	8	22	18	10
E.S.L. 3	8	8	20	16	5
E.S.L. 4	7	8	20	19	5
R.C.A.*1	6	3	25	25	5
R.C.A. 2	4	5	31	30	5
R.C.A. 3	5	5	34	25	5
R.C.A. 4	5	5	31	29	5
W.I.** 1	8	9	19	17	5
W.I. 2		8		16	5

*An additional English period given to students of E.S.L. This course emphasizes pronunciation, phonics, and intonation.

**Writing.

Texts and/or Materials Used for E.S.L., R.C.A., and W.I.

E.S.L. 1 - Lado 1 text and workbook, Access, Side by Side
E.S.L. 2 - Lado 2 text and workbook, Access, Side by Side
E.S.L. 3 - Lado 3 text and workbook
E.S.L. 4 - Lado 4 text and workbook

R.C.A. 1 - Modern American English 1
R.C.A. 2 - Modern American English 2
R.C.A. 3 - Modern American English 3
R.C.A. 4 - Modern American English 4

W.I. 1 - Elementary Composition Practices 2
W.I. 2 - Teacher-made materials

All program students were placed individually into Chinese classes on the basis of their scores on a teacher-made test. A three-year sequence of classes, Chinese 1 to 6, was offered by the foreign-language department. The courses were conducted in Mandarin and offered daily, with five class periods per week. Table 10 lists the fall and spring offerings in Chinese at Seward Park.

TABLE 10

Instruction in Chinese at Seward Park High School

Course Title And Level	Number of Classes	Average Class Register	
		Fall	Spring
Chinese 1/2	1	34	30
Chinese 3	3	33	24
Chinese 4	4	31	38
Chinese 5	5	34	31
Chinese 6	3	35	31

Textbooks for Chinese Courses

Chinese 1 - Conversational Chinese
Chinese 2 - Speaking Mandarin
Chinese 3 - Read Chinese, Read About Chinese (Book 2)
Chinese 4 - Read Chinese, Read About Chinese (Book 3)
Chinese 5 - Sketch of Chinese History
Chinese 6 - Sketch of Chinese History

The evaluators observed two mathematics classes at Seward Park. One class was taught by a Mandarin-speaking teacher, who could also communicate in Cantonese. She taught in English and explained frequently in Chinese,

usually Cantonese. The students invariably used Chinese in speaking to her, unless they were asked specifically for answers in English. The teacher in the other class was a Chinese-American. He spoke some Chinese, but his enthusiasm and teaching skill enabled him to bridge the language gap.

The evaluators also observed four classes in which paraprofessionals assisted English-dominant teachers: American history, global history, accounting, and general science. In all four, the paraprofessionals interpreted and translated. This procedure was followed most extensively in the science class, where the teacher and paraprofessional had worked out an efficient system. One of the evaluators was particularly impressed by an improvement in the science teacher's Cantonese from the previous year. In two classes, the paraprofessionals spoke only Mandarin. When the students were asked in Cantonese whether they understood Mandarin, about a third said they did not. In all the classes, the teachers paid much attention to the pronunciation of English words, and asked students to repeat words frequently.

An E.S.L. class and a Chinese class were also observed. In the Chinese class, the teacher explained a passage in classical Chinese in the traditional way. He used Mandarin exclusively, but a few students answered in Cantonese. Again, when asked, some students said they did not understand Mandarin.

In an interview with the Chinese teacher, the observer was told that the Chinese courses were offered by the foreign-language department, not by the bilingual program. Thus the choice of textbooks and other curriculum materials was made by teachers of Chinese as a foreign language. According to the teacher, there was a wide divergence among the students in their

Chinese proficiency. Many from Indo-China were particularly ill-prepared, since some had had their schooling interrupted for many years.

INSTRUCTIONAL OFFERINGS AT WASHINGTON IRVING

Five levels of English as a second language and one class of transitional E.S.L. were offered at Washington Irving. In both the fall and spring terms of 1981-1982, there were two classes per day on each of these levels, with about 15 students in each class.

Bilingual classes were offered in health science, home economics (food service), office training, sewing and dressmaking, typing, and social studies. Instruction was provided by monolingual teachers with assistance from a bilingual paraprofessional. Tables 11 and 12 list the fall and spring bilingual class offerings at Washington Irving.

TABLE 11

Chinese Bilingual Classes at Washington Irving High School (Fall)

Course Title	Average Class Register
Food Service	8
Sewing	14
Typing	28
Social Studies (3 classes)	30

TABLE 12

Chinese Bilingual Classes at Washington Irving High School (Spring)

Course Title	Average Class Register
Dressmaking	18
Health Teaching	27
Office Training Careers (2 classes)	22
Social Studies (2 classes)	49

An evaluator observed classes in English as a second language, clothing, health science, global history, mathematics, and chemistry. The paraprofessional interpreted and translated in the clothing, health science, and global history classes. Fluent in both Cantonese and Mandarin, she interpreted in both languages, though more frequently in Cantonese since 80 percent of the program students spoke Cantonese. Even so, some students from Cambodia could not communicate with her because they spoke Swatowese.

The Chinese language teacher was on leave during May and June and therefore, the three Chinese language classes were taken over by a substitute teacher. As at Seward Park, these Chinese courses were offered by the foreign-language department.

V. NON-INSTRUCTIONAL COMPONENT

OVERVIEW

Non-instructional services included curriculum and materials development, personal and academic guidance, staff training and professional development, and parental and community involvement. Additionally, the program offered administrative and coordinating services.

CURRICULUM DEVELOPMENT

The need for Chinese/English bilingual and multicultural texts increased as more and more students arrived with minimal preparation in English and with their education disrupted by political upheaval and economic difficulties. Translations from English monocultural texts were prepared by the curriculum specialists and paraprofessionals. The program also used materials developed by the program's predecessor at Seward Park, the Chinese Bilingual-Bicultural Program. These materials included:

1. world history I & II textbooks in English and Chinese;
2. ninth-grade algebra and tenth-grade geometry curricula in English and Chinese;
3. biology I & II curricula in English and Chinese;
4. a comprehensive science glossary in English and Chinese;
5. a health-education glossary in English and Chinese;
6. a three-year comprehensive Chinese language arts curriculum developed in conjunction with the New York State Department of Education;
7. a comprehensive guide in Chinese to school rules and regulations, services, credit requirements for graduation, etc.; and
8. a career guidance monograph in Chinese.

A biology textbook was developed, and a translation of curriculum materials for general science I & II should be available next year. However, the project director reported that there was still a need for more materials in general science, mathematics, and social studies.

SUPPORTIVE SERVICES

Supportive services at Seward Park were provided primarily by the bilingual guidance counselor and the two family workers, and to some degree by paraprofessionals. They worked with students to resolve academic problems, to plan for the future, and to deal with difficulties that arose in adjusting to the new and radically different environment in which the recent immigrants found themselves. They also attempted to help students with problems stemming from the strained economic circumstances of their families.

The guidance counselor met with each student at least three times during the year and maintained files charting each student's adjustment and progress. He and the family workers made home visits to consult with parents when necessary. They also assembled small groups of students who required additional assistance.

The guidance counselor noted that the influx of Chinese and other Asian immigrants had created a demand for supportive services that exceeded the capacity of the program. However, he reported that his work load was lighter than the previous year, since another Chinese teacher had been assigned as grade advisor. The greatest need of the counseling program was for space where the counselor could talk to a student in private.

The guidance counselor at Washington Irving did not speak Chinese. She reported that the paraprofessional's help was invaluable. In fact,

the paraprofessional had assumed some of the duties of a family worker. The guidance counselor said that it would be helpful to have a full-time bilingual worker in her office.

STAFF DEVELOPMENT

Staff development consisted of in-service training, including university courses. Appendix B lists the courses attended by staff. Career, staff development, and cultural workshops were held in both schools. Semi-monthly meetings of program staff dealt with issues of planning and coordination with other programs.

During 1981-1982, the program staff attended several conferences and professional meetings, including the Third East Coast Asian-American Education Conference, the New York State Bilingual Education Conference, the New York State Management Training Conference, the 1982 National A.P.A. Education Conference, and the Indo-Chinese Bilingual Education Conference.

Intensive workshops in Cantonese and Mandarin continued to be offered for English-speaking teachers at the beginning of the school year. The program director sensitized new teachers at their orientation session by speaking Cantonese and writing Chinese exclusively for ten minutes in her talk. The teachers later reported that it was most helpful in making them understand the problems of LEP students.

PARENTAL AND COMMUNITY INVOLVEMENT

The program director and staff encouraged parental involvement. Parents were generally responsive; they held meetings on Sundays, either at the school or at the Chinese Consolidated Benevolent Association in Chinatown. The group discussed such topics as: school regulations; the rights of students and parents; and school reports and records.

The program had a voluntary advisory committee of parents, staff, and students. The committee held monthly meetings attended by approximately 12 members each session.

The guidance counselor at Seward Park talked or wrote to many parents, particularly those whose children were experiencing difficulties in adjusting academically or socially. Home visits were made on occasion. Such contacts were crucial to the program, since Chinese parents adhere to the traditional attitude that once students go to school, they are in the hands of teachers. Unfamiliar with the American system, parents relied on the guidance counselor for information about their children's progress, about counseling services and events in the school, and placement procedures, report cards, and graduation requirements.

Program staff was reported to be particularly effective in securing parental involvement. This was the result of frequent communication by telephone and mail requesting responses and attendance, and was facilitated, as the project director mentioned, by the fact that the staff spoke the language of the parents.

AFFECTIVE DOMAIN

In general, the students supported the program and participated eagerly in extracurricular activities. The Chinese Culture Club at Seward Park was of special importance because it provided new students with counseling from their peers.

Forty-eight of 50 seniors at Seward Park had college plans. This was vivid evidence of the high achievement motivation demonstrated by these students. The success of the program at Seward Park was also evidenced

by the fact that 48 of 49 students who left the program did so because they were graduating.

Both schools have experienced incidents of antagonism between Chinese and non-Chinese students which seem to be caused by cultural misunderstandings. The administration at Seward Park has taken steps to increase communication and understanding between the groups of students (see Recommendations).

VI. FINDINGS

ASSESSMENT PROCEDURES, INSTRUMENTS, AND FINDINGS

The following section presents the assessment instruments and procedures, and the results of the testing to evaluate student achievment in 1981-1982.

Students were assessed in English language development, growth in their mastery of their native language, mathematics, social studies, science and in various vocational and other content-area courses. The following are the areas assessed and the instruments used:

English as a second language -- CREST (Criterion Referenced English Syntax Test, Levels I, II, III)

English reading achievement -- New York City Reading Test

Mathematics achievement -- New York City Mathematics Test

Mathematics performance - Teacher-made tests

Science performance -- Teacher-made tests

Social studies performance -- Teacher-made tests

Native language arts performance -- Teacher-made tests

Business education performance -- Teacher-made tests

Performance in miscellaneous courses -- Teacher-made tests

Attendance -- School and program records

The following section presents the analyses performed.

English as a Second Language

The instrument used to measure growth in English language development was the Criterion Referenced English Syntax Test (CREST), which tests mastery of specific syntactic skills at three levels. Material at the

beginning and intermediate levels of the CREST is broken down into 25 objectives per level, such as present-tense forms of the verb "to be" (Level I), or possessive adjectives and pronouns (Level II). Material at the advanced level (Level III) is organized into fifteen objectives, such as reflexive pronouns. At each level, students are asked to complete four items for each objective. An item consists of a sentence frame for which the student must supply a word or phrase chosen from four possibilities. Mastery of a skill objective is determined by a student's ability to answer at least three out of four items correctly.

This report provides information on the average number of objectives mastered, and the average number of objectives mastered per month of treatment. A grade and level breakdown is reported for students who were pre- and post-tested with the same test level.

Reading and Mathematics

Achievement of program students at Seward Park was determined from the pre- and post-tests of the New York City Reading and Mathematics Tests and is reported by grade.

Statistical significance was determined through the application of the correlated t-test model. This statistical analysis demonstrates whether the difference between pre- and post-test mean scores is larger than would be expected by chance variation alone; i.e. is statistically significant. This analysis does not represent an estimate of how students would have performed in the absence of the program. No such estimate could be made because of the inapplicability of test norms for this population, and the unavailability of an appropriate comparison group.

Educational significance was determined for each grade level by calculating an "effect size" based on observed summary statistics using the procedure recommended by Cohen.* An effect size for the correlated t-test model is an estimate of the difference between pre- and post-test means expressed in standard deviation units freed of the influence of sample size. It became desirable to establish such an estimate because substantial differences that do exist frequently fail to reach statistical significance if the number of observations for each unit of statistical analysis is small. Similarly, statistically significant differences often are not educationally meaningful.

Thus, statistical and educational significance permit a more meaningful appraisal of project outcomes. As a rule of thumb, the following effect size indices are recommended by Cohen as guides to interpreting educational significance (ES):

a difference of 1/5 = .20 = low ES

a difference of 1/2 = .50 = moderate ES

a difference of 4/5 = .80 = high ES

Performance in Content-Area and Business Classes

Student achievement in mathematics, social studies, science, and native language arts courses is reported in terms of the number of students attending and the percent passing those courses. Courses are reported by grade and each term is reported separately, as high school students

*Jacob Cohen. Statistical Power Analysis for the Behavioral Science (Revised Edition). New York: Academic Press, 1977 Chapter 2.

may be programmed for different courses each term. As a result, the two groups of students reported in fall and spring may not be similar and are not compared.

Student achievement is also reported for business education, vocational education, and other areas relating to the career/vocational emphasis of the programs.

Attendance

Information is provided on the attendance rate of students participating in the bilingual program compared with that of the total school populations. The following pages present student achievement in tabular form.

TABLE 13

Performance of Seward Park Bilingual Program Students Tested on the Criterion Referenced English Syntax Test (CREST): Average Number of Objectives Mastered by Grade and Test Level (E.S.L. Title I Chinese-Speaking Students, Fall)

	LEVEL I					LEVEL II					LEVEL III					TOTALS			
		Average Number of Objectives Mastered			Gain/		Average Number of Objectives Mastered			Gain/		Average Number of Objectives Mastered			Gain/		Average	Average Number of Objectives Mastered	
Grade	N	Pre	Post	Gain	Month	N	Pre	Post	Gain	Month	N	Pre	Post	Gain	Month	N	Months of Treatment	Gain	Gain/Month
9	27	10.7	17.2	7.1	2.1	3	15.3	20.3	5.0	1.5	1	14.0	15.0	1.0	0.3	31	3.4	6.7	1.9
10	55	14.2	19.5	5.3	1.5	49	9.6	16.1	6.5	1.9	----------					104	3.4	5.8	1.7
11	6	7.5	14.3	6.8	2.0	2	12.5	17.0	4.5	1.3	26	9.8	11.8	2.0	0.6	34	3.4	3.0	0.9
12	1	10.0	14.0	4.0	1.2	----------					9	9.9	12.3	2.4	0.7	10	3.4	2.6	0.8
TOTAL	89	12.4	18.4	5.9	1.7	54	10.1	16.4	6.3	1.8	36	10.0	12.0	2.1	0.6	179	3.4	5.3	1.5

Note. number of objectives for each level: Level I (25), Level II (25), Level III (15).

.As a group, program students substantially exceeded the program's objective for achievement in this area (one new objective mastered per month).

.Overall, grades 9 and 10 mastered new objectives at a rate practically double that set as the program goal, while grades 11 and 12 almost achieved the criterion.

.Of the program students tested with Level I of the CREST, each grade met or exceeded the program goal. The ninth and eleventh grades doubled the expected goals, mastering two new objectives per month.

.For students tested at Level II, each grade level, again, met or exceeded the program goal of one new objective per month. Ninth graders improved at a rate of one-and-one-half times the goal, and tenth graders at almost twice the goal.

TABLE 14

Performance of Seward Park Bilingual Program Students Tested on the Criterion Referenced English Syntax Test (CREST): Average Number of Objectives Mastered by Grade and Test Level (E.S.L. Title I Chinese-Speaking Students, Spring)

	LEVEL I					LEVEL II					LEVEL III					TOTALS			
		Average Number of Objectives Mastered					Average Number of Objectives Mastered					Average Number of Objectives Mastered					Average	Average Number of Objectives Mastered	
Grade	N	Pre	Post	Gain	Gain/ Month	N	Pre	Post	Gain	Gain/ Month	N	Pre	Post	Gain	Gain/ Month	N	Months of Treatment	Gain	Gain/Month
9	80	9.5	15.8	6.3	2.0	19	13.2	15.3	2.1	0.6	1	15.0	15.0	0.0	0.0	100	3.2	5.5	1.7
10	37	12.3	17.4	5.1	1.6	63	11.6	16.8	5.2	1.6	25	8.9	11.9	2.9	0.9	125	3.2	4.7	1.5
11	1	23.0	23.0	0.0	0.0	2	15.5	16.0	0.5	0.2	9	9.0	11.7	2.8	0.9	12	3.2	2.2	0.7
TOTAL	118	10.5	16.4	5.9	1.8	84	12.1	16.4	4.4	1.4	35	9.1	11.9	2.8	0.9	237	3.2	4.9	1.5

Note. number of objectives for each level: Level I (25), Level II (25), Level III (15).

.Overall, the ninth and tenth graders improved at a rate of one-and-one-half times the program objective of one new objective mastered per month, while eleventh graders failed to achieve it.

.Of the program students tested at Level I, the ninth and tenth graders exceeded the program goal. The smaller gains for the eleventh grader was due to his/her high initial score.

.For students tested at Level II, tenth graders improved at a rate of one-and-one-half times the program goal. Smaller gains were made by ninth and eleventh graders.

.For students tested at Level III, the tenth and eleventh graders almost met the program goal of one new objective per month. The one ninth grader reported scored the maximum on the initial test, thereby eliminating the opportunity for demonstrating improvement on the post-test.

TABLE 15

Performance of Washington Irving Program Program Students Tested on the Criterion Referenced English Syntax Test (CREST): Average Number of Objectives Mastered by Grade and Test Level (E.S.L. Title I Chinese-Speaking Students, Fall)

	LEVEL I					LEVEL II					LEVEL III					TOTALS			
		Average Number of Objectives Mastered					Average Number of Objectives Mastered					Average Number of Objectives Mastered					Average	Average Number of Objectives Mastered	
Grade	N	Pre	Post	Gain	Gain/ Month	N	Pre	Post	Gain	Gain/ Month	N	Pre	Post	Gain	Gain/ Month	N	Months of Treatment	Gain	Gain/Month
9	5	14.8	20.2	5.4	1.5	1	9.0	11.0	2.0	0.9	----------					6	3.2	4.8	1.5
10	----------					32	13.2	19.2	5.9	1.7	4	9.0	10.0	1.0	0.3	36	3.4	5.3	1.5
11	----------					4	16.2	20.0	3.8	1.1	1	5.0	6.0	1.0	0.3	5	3.3	3.2	1.0
TOTAL	5	14.8	20.2	5.4	1.5	37	13.4	19.0	5.5	1.6	5	8.2	9.2	1.0	0.3	47	3.4	5.0	1.5

Note. number of objectives for each level: Level I (25), Level II (25), Level III (15).

.Program students tested at Level I improved at a rate of one-and-one-half times the program goal of one objective mastered per month.

.For Level II, the tenth and eleventh graders met or exceeded the program goal, and the ninth grader almost met the goal. The performance of students at Level III was considerably lower than at the other levels of the CREST.

.Overall, each grade level met or exceeded the program goal of one new objective mastered per month.

TABLE 16

Performance of Washington Irving Bilingual Program Students Tested on the Criterion Referenced English Syntax Test (CREST): Average Number of Objectives Mastered by Grade and Test Level (E.S.L. Title I Chinese-Speaking Students, Spring)

	LEVEL I					LEVEL II					LEVEL III					TOTALS			
		Average Number of Objectives Mastered			Gain/		Average Number of Objectives Mastered			Gain/		Average Number of Objectives Mastered			Gain/		Average Months of	Average Number of Objectives Mastered	
Grade	N	Pre	Post	Gain	Month	N	Pre	Post	Gain	Month	N	Pre	Post	Gain	Month	N	Treatment	Gain	Gain/Month
9	8	12.0	16.4	4.4	1.3	1	16.0	22.0	6.0	1.8	2	14.0	15.0	1.0	0.3	11	3.2	3.9	1.2
10	3	10.3	11.6	1.3	0.4	24	15.7	18.9	3.2	1.0	9	9.5	12.0	2.4	0.7	36	3.2	2.9	0.9
11	----------					----------					7	9.4	12.7	3.3	1.0	7	3.2	3.2	1.0
TOTAL	11	11.5	15.0	3.5	1.1	25	15.7	19.1	3.3	1.0	18	10.0	12.6	2.6	0.8	54	3.2	3.1	1.0

Note. number of objectives for each level: Level I (25), Level II (25), Level III (15).

.Overall, each grade level met the program goal of one new objective mastered per month.

.Of the program students tested at Level I, the ninth graders met the program goal of one new objective mastered per month.

.For students tested at Level II, each grade met or exceeded the program goal.

.For students tested at Level III, the eleventh grade met the program goal of one new objective per month. The smaller gain reported for the one ninth grader is due to the higher initial score which left little opportunity for improvement.

TABLE 17

English Reading Achievement at Seward Park High School

Significance of Mean Total Raw Score Differences Between Initial and Final Test Scores in English Reading Achievement of Bilingual Students on the New York City Reading Test by Grade

		Pre-Test		Post-Test						
Grade	N	Mean	Standard Deviation	Mean	Standard Deviation	Mean Difference	Corr. Pre/post	T-test	Level of Significance	Educational Significance
11	63	28.0	7.0	26.8	11.9	-1.2	0.59	-1.0	NS	-.17
12	39	27.0	8.7	31.7	10.2	4.7	0.71	4.06	.001	.77

.One hundred and two program students from the eleventh and twelfth grades were pre- and post-tested with the New York City Reading Test.

.Gains for the twelfth grade were statistically significant.

.Because the test levels were not given, it is difficult to determine why the eleventh-grade students did not demonstrate growth. However, an examination of the individual scores for these students, indicates that they may have been pre- and post-tested with different level tests with the post-test being more difficult.

TABLE 18

Achievement in Mathematics at Seward Park High School

Significance of Mean Total Raw Score Differences Between Initial and Final Test Scores in Mathematics Achievement of Bilingual Students on the New York City Mathematics Test by Grade

		Pre-Test		Post-Test						
Grade	N	Mean	Standard Deviation	Mean	Standard Deviation	Mean Difference	Corr. Pre/post	T-test	Level of Significance	Educational Significance
11	61	29.1	8.0	31.2	8.9	2.1	0.81	3.15	.003	.52
12	35	31.8	9.8	32.5	9.0	0.7	0.83	0.78	NS	.18

.Ninety-six program students from the eleventh and twelfth grades were pre- and post-tested with the New York City Mathematics Test.

.Although the twelfth grade had only a slight gain, the gains made by students in the eleventh grade were statistically significant and of moderate educational significance.

.As only two students were reported as having taken the New York City Mathematics Test at Washington Irving High School, no data are presented for that school.

TABLE 19

Number of Students at Seward Park High School Attending Courses and Percent Passing Teacher-Made Examinations in Content-Area Classes (Fall and Spring)

		FALL TOTAL		SPRING TOTAL	
	Grade	N	Percent Passing	N	Percent Passing
Mathematics	9	87	71.0	124	82.0
	10	175	82.0	205	90.0
	11	89	94.0	84	87.0
	12	44	98.0	36	92.0
TOTAL		395	84.0	449	88.0
Science	9	94	57.4	132	65.0
	10	176	81.0	221	81.0
	11	78	92.0	58	81.0
	12	36	89.0	24	96.0
TOTAL		384	78.0	435	77.0
Social Studies	9	10	70.0	28	64.0
	10	127	81.0	177	81.0
	11	89	87.0	91	89.0
	12	44	93.0	31	94.0
TOTAL		270	96.0	327	83.0

.Overall, students in grades 10, 11, and 12 achieved the program's objective of 80 percent passing in all three content areas in the fall. Grade 9 students generally achieved rates of passing which were below the 80 percent level.

.Overall achievement in the fall was highest in social studies (96 percent) and lowest in science (78 percent).

.As in the fall, grades 10, 11, and 12 exceeded the program objective of 80 percent passing in the spring. Ninth graders met the objective in mathematics.

.Overall achievement in the spring was highest in mathematics and lowest in science.

TABLE 20

Number and Percent of Students at Washington Irving High School Passing Teacher-Made Examinations in Mainstream Content-Area Courses (Fall and Spring)

Subject	Grade	FALL N	FALL Number Passing	FALL Percent Passing	SPRING N	SPRING Number Passing	SPRING Percent Passing
Mathematics	9	11	9	81.8	15	13	86.7
	10	43	40	93.0	44	41	93.2
	11	7	5	71.4	7	6	85.7
TOTAL		61	54	89.0	66	60	91.0
Science	9	--	--	--	4	4	100.0
	10	20	18	90.0	27	26	96.3
	11	3	3	100.0	3	3	100.0
TOTAL		23	21	91.0	34	33	97.0
Social Studies	9	--	--	--	3	2	66.7
	10	23	22	95.7	37	26	70.3
	11	7	7	100.0	7	5	71.4
TOTAL		30	29	97.0	47	33	70.0

- In mathematics and science, students at each grade level exceeded the program objective of 80 percent passing. Students in mainstream social studies courses achieved lower success rates.
- Student achievement in mainstream content-area courses at Washington Irving was high, ranging from 70 percent (social studies, spring term) to 97 percent (social studies, fall term and science, spring term).
- Generally, more students were reported as taking courses in the spring term than in the fall.

TABLE 21

Number of Students at Seward Park High School Attending Courses and Percent Passing Teacher-Made Examinations in Native Language Arts (Chinese)

Courses	Grade 9		Grade 10		Grade 11		Total	
	N	% Passing	N	% Passing	N	% Passing	N	% Passing
Native Language Arts (Fall)	77	85.7	107	87.9	7	85.7	191	87.0
Native Language Arts (Spring)	99	88.9	122	94.3	5	100.0	226	92.0

- The program objective, that 75 percent of the students advance one level by passing the course content each semester, was far surpassed.

- The overall passing rates for Seward Park Chinese students in native language classes were quite high, 87 percent in the fall and 92 percent in the spring term. The results for all grade levels were quite good with none falling below 85 percent in the fall and 88 percent in the spring.

- Fewer students were reported to be taking native language classes than content-area classes.

- The percent passing increased at each grade level from the fall to the spring.

TABLE 22

Number of Students at Washington Irving High School Attending Courses and Percent Passing Teacher-Made Examinations in Native Language Arts (Chinese)

Courses	Grade 9		Grade 10		Grade 11		Total	
	N	% Passing	N	% Passing	N	% Passing	N	% Passing
Native Language Arts (Fall)			22	100.0	4	100.0	26	100.0
Nativel Language Arts (Spring)	4	100.0	27	100.0	4	100.0	35	100.0

.The overall pass rate for Chinese-speaking students in native language arts was a remarkable 100 percent for both fall and the spring. The program objective, that 75 percent of the students advance one level by passing the course content-area each semester, was far surpassed.

.Relatively few students were reported as having taken native language courses.

TABLE 23

Number of Students at Seward Park High School Attending Courses and Percent Passing Teacher-Made Examinations in Additional Courses, by Language of Instruction, Fall

	Grade 9		Grade 10		Grade 11		Grade 12		Total	
Courses in English	N	% Passing	N	% Passing	N	% Passing	N	% Passing	N	% Passing
Business Education					10	90.0	4	75.0	14	86.0
Additional Tests	1	100.0	15	100.0	44	95.0	74	97.0	134	97.0

	Grade 9		Grade 10		Grade 11		Grade 12		Total	
Courses in English & Chinese	N	% Passing	N	% Passing	N	% Passing	N	% Passing	N	% Passing
Business Education	10	90.0	54	91.0	24	95.8	8	100	96	94.0
Additional Tests			2	100.0	2	100.0	3	100.0	7	100.0

Note. Business education includes typing, business skills, business law, accounting, and stenography. Additional tests are comprised of a variety of courses including music (piano, guitar, band, chorus), ceramics, photography, studio painting, art, health education, American history, economics, math, biology, and chemistry.

.Program participants taking business education and additional tests in English did quite well, with an overall passing rate of 86 percent for business education and 97 percent for "additional tests." Passing rates were well above the program's criterion level of 80 percent.

.Program participants taking business education and additional tests in Chinese and English performed exceptionally well, scoring an overall passing rate of 94 percent for business education and 100 percent for additional tests.

.A substantial number of program students were enrolled in bilingual business education courses in the fall term.

TABLE 24

Number of Students at Seward Park High School Attending Courses and Percent Passing Teacher-Made Examinations in Additional Courses, by Language of Instruction, Spring

	Grade 9		Grade 10		Grade 11		Grade 12		Total	
Courses in English	N	% Passing	N	% Passing	N	% Passing	N	% Passing	N	% Passing
Business Education			2	100.0	15	93.0	20	100.0	37	97.0
Vocational Education					6	100.0	4	100.0	10	100.0
Additional Tests	11	90.0	10	100.0	95	92.0	74	91.0	190	92.0

	Grade 9		Grade 10		Grade 11		Grade 12		Total	
Courses in English & Chinese	N	% Passing	N	% Passing	N	% Passing	N	% Passing	N	% Passing
Business Education	24	54.0	66	82.0	31	84.0	11	100.0	132	79.0
Additional Tests			4	100.0	9	88.9	10	90.0	26	81.0

Note. Business education includes typing, business skills, business law, accounting, and stenography. Vocational education includes general vocational education, computer programming, drafting, and woodshop. Additional tests are comprised of a variety of courses including music (piano, guitar, band, chorus), ceramics, photography, studio painting, art, health education, American history, economics, math, biology, and chemistry.

.Program participants taking these courses in English performed remarkably well, with overall passing rates of 97 percent for business education, 100 percent for vocational education, and 92 percent for additional tests.

.Program participants taking these courses in English and Chinese achieved overall passing rates of 79 percent for business education and 81 percent for additional tests, which approximated the program's criterion of an 80 percent passing rate.

TABLE 25

Number of Students at Washington Irving High School Attending Courses and Percent Passing Teacher-Made Examinations in Additional Courses, Fall and Spring

Fall Courses	Grade 9 N	Grade 9 % Passing	Grade 10 N	Grade 10 % Passing	Grade 11 N	Grade 11 % Passing	Total N	Total % Passing
Business Education	8	100.0	40	100.0	71	100.0	119	100.0
Additional Tests					1	100.0	1	100.0

Spring Courses	Grade 9 N	Grade 9 % Passing	Grade 10 N	Grade 10 % Passing	Grade 11 N	Grade 11 % Passing	Total N	Total % Passing
Business Education	8	100.0	31	94.0	6	100.0	45	96.0
Vocational Education	14	100.0	9	100.0			23	100.0
Additional Tests	1	100.0	7	85.7	1	100.0	9	89.0

Note. Business Education indicates typing, accounting, business skills, and business law.

- Program participants had outstanding results with 100 percent passing at each grade level in the fall in business education. This far exceeded the program's objective of an 80 percent passing rate.

- Program participants, again, had very good results in the spring with 96 percent passing business education, 100 percent passing vocational education, and 89 percent passing health education (additional tests).

- The number of program participants reported as taking teacher-made examinations in business education decreased from 119 in the fall to 45 in the spring. Although there were no students reported as taking teacher-made examinations in vocational education in the fall, there were 23 reported in the spring. The respondents to the health education (additional tests) teacher-made examinations also increased from 1 in the fall to 9 in the spring.

TABLE 26

Significance of the Difference Between the Attendance Percentage of Program Students at Seward Park High School and the Attendance Percentage of the School

Grade	N	Mean Percentage	Standard Deviation
9	132	97.3	6.3
10	202	98.2	9.1
11	87	97.6	4.1
12	50	97.6	4.1
TOTAL	471	97.8	7.2

Average School-Wide Attendance Percentage: 77.75

Percentage Difference = 20.05 z = 9.36 p = .0001

- The difference between the attendance percentage of program students and the school-wide attendance is 20.05 percentage points. This difference is statistically significant at the .0001 level, and meets the program's objective.
- The mean percentage is practically the same for all grade levels, and averages above 97 percent.
- The standard deviation ranges from 4.1 for grades 11 and 12 to 9.1 for grade 10.

TABLE 27

Significance of the Difference Between the Attendance Percentage of Program Students at Washington Irving High School and the Attendance Percentage of the School

Grade	N	Mean Percentage	Standard Deviation
9	20	98.1	4.8
10	48	98.5	2.4
11	7	96.1	4.1
TOTAL	75	98.2	3.3

Average School-Wide Attendance Percentage: 77.43

Percentage Difference = 20.77 $z = 3.82$ $p = .0001$

- The difference between the attendance percentage of program students and the school-wide attendance is 20.77 percentage points.
- This difference is statistically significant at the .0001 level, meeting the program's objective in this area.
- The mean percentage is practically the same for grade 9 and 10 but drops slightly for grade 11.
- The standard deviation ranges from 2.4 for grade 10 to 4.8 for grade 9.

SUMMARY OF FINDINGS

Knowledge of English Syntax

Of those tested with the CREST, students at both schools at all grade levels generally met or exceeded the project goal of one new objective mastered per month of treatment in both the fall and spring semesters. Most groups, in fact, improved at a rate approximately one-and-one-half times the goal.

Tables 13, 14, 15, and 16, reveal that, in general, the higher a student's grade, the higher the level of the test he/she was given. In addition, the higher the level taken, the smaller his/her gain was likely to be. The smaller gains are probably due in part, at least, to the higher initial scores by those taking Level II and III (Level III is comprised of only 15 objectives, so an initial score of 9, for example, indicates that 60 percent of the material is already mastered). Because high initial scores restrict the size of possible gains, they produce what is referred to as a "ceiling effect." Ceiling effects are especially evident for the ninth graders at Seward Park in both terms and for ninth graders in the spring. In addition, Level III objectives are apparently somewhat more difficult than are those of Levels I and II.

Students at Seward Park (Tables 13 and 14) made excellent gains on Level I (both semesters) and Level II (fall semester). Students at Washington Irving (Tables 15 and 16) also made excellent gains on Level I (fall semester) and Level II (both semesters).

Reading in English

One hundred and two program students at Seward Park from the eleventh grades were pre- and post-tested with the New York City Reading Test. Gains for the twelfth grade were highly statistically and educationally significant as presented in Table 17.

The performance of the eleventh graders at Seward Park indicated that the level of the post-test appeared to be much more difficult than the pre-test. As a result, growth could not be demonstrated.

Achievement in Mathematics

Program students at Seward Park and Washington Irving were tested on The New York City Mathematics Test as indicated in Table 18. Ninety-six program students at Seward Park took the test, and the gains by the eleventh grade were highly statistically significant and moderately educationally significant.

Only two program students at Washington Irving took this test. As a result of this small number, the outcomes could not be meaningfully reported.

Data on the performance at Seward Park of Chinese-language students in mathematics courses are reported in Table 19 which reports content-area courses. Data for all Washington Irving students appear in Table 20. As a quick glance at these tables indicates, students in both schools in all grades did quite well, generally scoring in the 80 and 90 percent range. In the fall, ninth-grade Chinese students at Seward Park and eleventh-grade students at Washington Irving were the only groups having passing rates less than 80 percent. In the spring,

students in both schools in all grades scored above 80 percent passing.

Achievement in Science

Rates of success of students in science courses are reported in Tables 19 and 20. A review of these tables reveals that program participants at Seward Park did quite well in science, as they did in mathematics. The ninth graders in the fall and the spring had the lowest rate among the Chinese students. Again, each grade level, except the ninth graders, had overall passing rates which surpassed the objective of 80 percent.

All program students at Washington Irving did exceptionally well in the fall and the spring with passing rates of 91 and 97 percent, respectively.

Achievement in Social Studies

Data on the performance at Seward Park of Chinese language students reported in Table 19 show that each grade level, except grade 9, had overall passing rates which surpassed the objective of 80 percent in the fall. The results in the spring term, were again, quite good for all grade levels except grade nine. Most grade levels met or exceeded the program objective of 80 percent passing in both the fall and the spring.

All program students at Washington Irving did exceptionally well in the fall as indicated in Table 20. Each grade level met the the objective of 80 percent passing. In the spring, none of the grades reached the 80 percent criterion level.

Achievement in Native Language Arts

As the data presented in Tables 21 and 22 indicate, all groups also did very well in their native language arts courses. At Seward Park each grade level exceeded a passing rate of 80 percent in both semesters. At Washington Irving all students performed remarkably well with passing rates of 100 percent for each grade.

Performance in Business Education, Vocational Education and Miscellaneous Courses

Performance in business education courses is reported in Tables 23 through 25. Program participants did quite well. At Seward Park, the program objective of 80 percent passing was at least met and in most cases surpassed by students taking the various tests in English and Chinese in the fall. The results for the spring term were similarly as good, except for ninth graders taking business education in Chinese.

Program students at Washington Irving had outstanding results with 100 percent passing the various courses at each grade level in the fall term. In the spring, the program participants again had exceptional results with 96 percent passing business education, 100 percent passing vocational education, and 89 percent passing health education.

Attendance

Comparisons of the attendance rates of program participants with that of the schools as a whole are presented by grade in Tables 26 and 27. These tables contain average rates for the schools and for the various participant groups, the percent differences, values of the z statistics, and levels of statistical significance. The z statistics indicate the

extent to which the observed percentage differences vary from what might be expected by chance with the probability (p) indicating the likelihood that the rate of the program group was not actually different from that of the population of the school as a whole. Thus a probability of .01 would indicate that there is less than one chance in 100 that the group in question was just a random sample of students from that school.

As a quick examination of these tables indicates, program students at both schools in all grades had average attendance rates which exceeded the school average by approximately 20 percentage points. These differences are statistically significant to an extraordinary degree.

VII. CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

In its second year of operation, the Chinese Bilingual Education Program appeared to be performing well. Most groups of students at both schools improved in their knowledge of English at a rate approximately one- and one-half times the program objective. In mathematics, science, and social studies classes, and in business and vocational education courses, program students at both schools had overall passing rates which either came extremely close to or exceeded the criterion level set as the program objective (that 80 percent of the students would pass examinations in these courses). Students also performed well in their native language arts courses, with passing rates ranging from 86 percent to 100 percent in both the fall and spring semesters. Finally, program students at both schools in all grades had average attendance rates which exceeded the school average by approximately 20 percentage points.

In the non-instructional areas, a biology textbook was developed for classroom use, and a translation of curriculum materials for general science I and II was begun. Academic and personal counseling was available to program students and two family workers made home visits to consult with parents when necessary. In turn, parents were generally responsive, attending program meetings as well as participating in the voluntary advisory committee. Development activities for staff included attendance at workshops, semi-monthly staff meetings, conferences, and university courses.

RECOMMENDATIONS

On the basis of site visits, classroom observations, interviews with program personnel, and analysis of student performance data, the following recommendations are made for possible program improvement.

1. The program, in cooperation with the foreign language departments of each school, should consider developing a formal set of objectives and guidelines for the teaching of Chinese to students in the program. These guidelines should emphasize the difference between teaching Chinese as a foreign language (Mandarin, the national language of China) and teaching Chinese to native speakers from Hong Kong and the southern part of Vietnam, who have received their previous instruction in Cantonese. At present, native-language instruction is the responsibility of each foreign language department resulting in varying teaching approaches and choice of curriculum materials.

2. The program might consider repeating the successful "crash course" in Cantonese, which it held for monolingual English-speaking teachers, for those teaching staff who wish to strengthen their skills in the language.

3. The program might consider establishing remedial courses in mathematics and science for entering students who are not well-prepared in these content areas. If the need does not warrant creating an entire class, then a peer tutoring program might be initiated with more successful students working individually with the new entrants.

4. The program and the administrations at both schools should make continued efforts to promote intergroup understanding. Courses or workshops might be offered to make students more aware of and sensitive to cultural differences. An important beginning has already been made at

Seward Park High School. For Washington Irving High School, the school administration, with help of the program, is urged to counter intergroup prejudice and stereotyping by considering developing a program of intercultural assemblies, units in social studies classes and/or group "rap" sessions for students.

VIII. APPENDICES

APPENDIX A

Staff Characteristics: Professional and Paraprofessional Staffs

Staff Members	Percent Of Time Spent In Each Function	Date App'd To Each Function	Education (Degrees)	Certification	License(s) Held	Years Of Experience (Monolinqual)	Years Of Experience (Bilinqual)	Years Of Experience E.S.L.
Director	100	1/76	B.A. Elem. Ed. M.A. Ed. Admin.	N.Y.S. N.Y.C.	Elem. K to 6 Bil. Sch/Comm.	1 year	7 years	None
Asst. Director	100	10/79	B.A. Lang/Liter. M.A. Bil. Ed.	N.Y.C.	Bil. Music, D.H.	None	2-1/2 years	1 year
Curriculum Specialist	100	4/82	B.A. Law M.A. Bil. Ed.	N.Y.C.	Chinese, Day High	2 years	3 years	None
Curriculum Specialist	100	10/75	B.S. Math M.S. Math	N.Y.C.	Math., Day High Bil. Math., D.H.	2 years	6-1/2 years	None
E.S.L. Specialist	100	10/81	B.A. Oriental Studies M.A. Teach. Ch	N.Y.C.	E.S.L., Day High	9 years	None	9 years
Bil. Guidance Counselor	100	9/79	Ph.D. Ed.	N.Y.C. N.Y.S.	Bil. Guidance	None	4 years	None

Staff Characteristics: Professional and Paraprofessional Staffs (continued)

Staff Members	Percent Of Time Spent In Each Function	Date App'd To Each Function	Education (Degrees)	Certification	License(s) Held	Years Of Experience (Monolinqual)	Years Of Experience (Bilinqual)	Years Of Experience E.S.L.
Paraprofessional	100	11/79	M.A. Asian Studies M.B. Bil. Ed.	N.Y.S. N.Y.C.	Common Branch	None	2-1/2 years	2-1/2 years Adult E.S.L.
Paraprofessional	100	12/78	B.S. Biology	N.Y.S.	-	27 years	3-3/4 years	None
Paraprofessional	100	10/75	B.A. Education	N.Y.C.	Chinese, Day High	30 years	7 years	None
Paraprofessional	100	9/80	B.A. Psycho.	-	-	-	8 years	6 years
Paraprofessional	100	2/81	B.S. Ed.	N.Y.C.	Common Branch	7 years	1-1/2 years	5 years

APPENDIX B

University Courses Attended by Staff (Paraprofessional and Paraprofessional)

Staff	Institution	Goal	Frequency	Courses
Paraprofessionals				
1	Touro College	Toward a B.A. Degree	12 credits/fall, 1981 12 credits/spring, 1982	Immigrant Experiences; Drawing & Painting II; Women in Fiction; Psychology of Aging; Intro. American Business; African American Experience
2	Hunter College	To improve skills in in English	3 credits/fall, 1981 3 credits/spring, 1982	Expository Writing; English for Bilingual Students III
3	Hunter College	To acquire more knowledge in Science and English	7 credits/spring, 1982	Biology (Introduction to Biology); English